

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Takao Mori et al.
Appl. No.: 10/796,527
Conf. No.: 1944
Filed: March 9, 2004
Title: APPARATUS AND METHOD FOR MANUFACTURING AN ORGANIC
ELECTROLUMINESCENCE DISPLAY
Art Unit: 1763
Examiner: Jeffrey Robert Lund
Docket No.: 112857-478

MAIL STOP - AF
Director of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Examiner:

This Request is submitted in response to the Final Office Action dated April 16, 2008 and the Advisory Action dated August 1, 2008. The Request is filed contemporaneously with USPTO form PTO/SB/33, "Pre-Appeal Brief Request for Review" and form PTO/SB/31, "Notice of Appeal."

Remarks begin on page 2 of this paper.

REMARKS

Claims 11, 14-16 and 18-21 are pending in the present application. Claims 11, 14-16 and 18-21 are the focus of this request.

In the Office Action of April 14, 2008, Claims 11, 14-16 and 18-21 are rejected for alleged obviousness reasons. Applicants maintain the arguments set forth in the July 16th Response and provide additional arguments below, pursuant to the present pre-appeal brief conference request.

The Office Action rejects claims 11, 14, 20 and 21 under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,695,564 to Imahashi ("*Imahashi*") in view of JP 10-214682 to Tanamura et al. ("*Tanamura*") and U.S. Patent No. 4,492,180 to Martin ("*Martin*"). Of these rejected claims, claim 11 is the sole independent claim. Claim 11 recites, at least in part, an apparatus for manufacturing an organic electroluminescence display including: a first alignment mechanism for aligning a mask, having openings corresponding to the predetermined pattern, to the substrate and for detachably attaching the mask and the substrate; a first formation unit including a plurality of vacuum processing chambers for sequentially forming the plurality of organic material layers on the substrate at a first color position, the substrate being attached to the mask; a second alignment mechanism for changing the alignment between the substrate and the mask, and for detachably attaching the substrate and the mask again; and a second formation unit including a plurality of vacuum processing chambers for sequentially forming the plurality of organic material layers on the substrate at a second color position, the substrate being attached to the mask, wherein each of the vacuum processing chambers correspond to each of the organic material layers, and wherein the second alignment mechanism is provided to connect the first formation unit and the second formation unit in series thereby providing flow-through processing.

Applicants respectfully submit that *Imahashi*, *Tanamura* and *Martin* do not teach or suggest the features of the presently claimed invention, even assuming that they are properly combinable. The Office Action appears to primarily rely on *Imahashi* for the alleged disclosure of: (a) "a first alignment mechanism (Fig. 8, U3a) for aligning a mask ... to the substrate and for detachably attaching the mask and the substrate;" (b) "a first formation unit (U1a, large process unit, U2a, transfer unit, U3a, interconnection unit/alignment unit, in/out unit, U5 in Fig. 2, small processing unit are all called first formation unit) including a plurality of vacuum processing

chambers ... for forming the plurality of organic material layers on the substrate at a first color position;” (c) “a second alignment mechanism (U3b) for changing the alignment between the substrate and the mask;” (d) “a second formation unit (U1a, large process unit, U2a, transfer unit, U3a, interconnection unit/alignment unit, in/out unit, U5 in Fig. 2, small processing unit are all called second formation unit) including a plurality of vacuum processing chambers ... for forming the plurality of organic material layers on the substrate at a second color position;” (e) “wherein each of the vacuum processing chambers correspond to each of the organic material layers;” and (f) “wherein the second alignment mechanism (U3b) is provided to connect the first formation unit (U1a) and the second formation unit (U1b) in series thereby providing flow-through processing.” (See, Office Action, pgs. 3-4).

Imahashi fails to disclose or suggest all of the features of the presently claimed invention, such as an apparatus for manufacturing an organic electroluminescence display; and a first alignment unit for aligning a mask having openings corresponding to the predetermined pattern, to the substrate and for detachably attaching the mask and the substrate, as admitted in the Office Action. (See, Office Action, pgs. 5-6). *Imahashi* relates to semiconductor wafers (i.e., not to an organic electroluminescence display device) and does not disclose aligning or realigning a mask relative to a substrate, especially in a unit connecting a first formation unit to a second formation unit. That is, the interconnection units U3a and U3b in *Imahashi* appear to primarily function as a transfer station and any alignment that would be performed in units U3a or U3b would only involve rotational or positional alignment of an individual semiconductor wafer, and would not include any alignment of that wafer respect to another object such as a mask. (See, *Imahashi*, col. 14, lines 48-50).

As previously argued, *Tanamura* fails to disclose a first formation unit and a second formation unit, each unit including a plurality of vacuum processing chambers. Indeed, each ‘formation unit’ in *Tanamura* (e.g., 22, 22a, 22b and 22c) only corresponds to or includes one processing chamber (e.g., 22).

Moreover, *Tanamura* does not disclose an alignment chamber as part of this apparatus, much less a second alignment mechanism for changing the alignment between the substrate and the mask, and for detachably attaching the substrate and the mask again, and a second formation unit including a plurality of vacuum processing chambers for sequentially forming the organic material layers on the substrate at a second color position, as recited in amended independent

Claim 11. Also, *Tanamura* fails to disclose a second alignment mechanism that is provided to connect the first formation unit and the second formation unit in series, as recited in amended claim 11. Instead, *Tanamura* only discloses empty transfer chambers 22c-26c. The Office Action cites to paragraph [0071] of *Tanamura* for alleged support of an alignment chamber. However, this paragraph merely appears to mention that the **“substrate 1 is installed on the metal mask arranged beforehand.”** (See, *Tanamura*, [0071]). This implies that whatever alignment is performed between the mask and substrate, is performed before the device enters the first chamber 21 at some remotely located alignment mechanism. Therefore, contrary to the presently amended claims, *Tanamura* does not contemplate performing an alignment and/or realignment between a substrate and a mask in the context of the disclosed manufacturing apparatus, and appears to teach away from incorporating alignment or realignment of a mask relative to a substrate in the context of multiple formation units. Accordingly, *Tanamura* does not achieve the level of flow through processing of the presently claimed invention.

Martin is relied on merely for the purported disclosure of a first alignment mechanism for aligning a mask, having openings corresponding to the predetermined pattern, to the substrate and for detachably attaching the mask (30,32) and the substrate (64). (See, Office Action, pg. 8). Again, this alignment mechanism is not taught or suggested in the context of a multiple formation unit manufacturing apparatus to provide for flow through processing as in the presently claimed invention. Therefore, even assuming that all of the references are properly combinable, at best, the references suggest using a mask/substrate alignment/realignment mechanism remotely from the main manufacturing apparatus. As mentioned above, even assuming that *Imahashi* discloses that one could perform an alignment in unit U3a, this would only be for aligning a simple circular semiconductor wafer. The only reference (i.e., *Tanamura*) that discloses aligning and realigning a mask relative to a substrate discloses doing so externally from the main manufacturing apparatus. Accordingly, *Martin* fails to cure the deficiencies of *Imahashi* and *Tanamura* as discussed above.

For at least the reasons discussed above, *Imahashi*, *Tanamura* and *Martin* fail to render obvious amended independent claim 11, and claims 14, 20 and 21 that depend therefrom, even assuming that they are properly combinable.

The Office Action also rejected claims 15, 16, 18 and 19 under 35 U.S.C. §103(a) as being unpatentable over *Imahashi* in view of *Tanamura*, *Martin* and in view of U.S. Patent

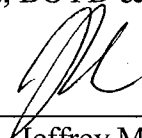
Publication No. 2001/0006827 to Yamazaki et al. ("*Yamazaki*"). *Yamazaki* is relied on merely for the purported teaching of an attachment fixture including a magnet plate for attaching the substrate and the mask and the mask is formed of a magnetic material. (See, Office Action, pg. 3). Therefore, *Yamazaki* fails to cure the deficiencies of *Imahashi*, *Tanamura* and *Martin*, as discussed above. The Office Action rejected claim 19 under 35 U.S.C. §103(a) in further view of U.S. Patent No. 6,214,631 to Burrows et al. ("*Burrows*"). *Burrows* is relied on merely for the purported disclosure of a shadow mask positioned in a first position over a substrate, where a first process is performed on the substrate through the shadow mask and then the shadow mask is moved to a second position over the substrate and measured relative to the first position. (See, Office Action, pg. 11). For at least the reasons given above, *Burrows* fails to cure the deficiencies of *Imahashi*, *Tanamura*, *Yamazaki* and *Martin*.

In light of the above, the Applicant respectfully submits that the rejections of Claims 11, 14-16 and 18-21 are improper and should be reversed. Accordingly, the Applicant respectfully requests that a timely Notice of Allowance be issued in this case. A Petition for a One-Month Extension of Time is submitted herewith. The Commissioner is authorized to deduct the Extension of Time fee and any additional fees that may be due in connection with this application as a whole from deposit account no. 02-1818. If such a deduction is made, please indicate the attorney docket number (0112857-478) on the account statement.

Respectfully submitted,

BELL, BOYD & LLOYD LLP

BY



Jeffrey M. Ingalls
Reg. No. 58,078
Phone: (312) 807-4377

Dated: August 18, 2008